

MANURE ON FROZEN & SNOW-COVERED GROUND

A REPORT TO THE GOVERNOR AND GENERAL ASSEMBLY

FEBRUARY 15, 2011



SUBMITTED BY **ROGER L. LANDE, DIRECTOR**
IOWA DEPARTMENT OF NATURAL RESOURCES

This report fulfills the requirements of Code of Iowa Sections 459.313B Application of
Liquid Manure on Snow-Covered Ground or Frozen Ground – Annual Report

Background

In 2009, the General Assembly passed legislation that limits the surface application of liquid manure from confinement feeding operations during the winter. This legislation was designed to address the surface runoff and water pollution problems that may occur when manure is surface applied on frozen or snow-covered ground.

Those water quality problems are most prevalent during late winter application. For that reason, the legislation purposely restricted surface manure application except in emergency situations. Specifically, those confinements large enough to require a manure management plan (more than 500 animal units) are prohibited from surface applying if the manure cannot be injected or incorporated, from:

Dec. 21 to April 1 on snow-covered ground, and
Feb. 1 to April 1 if the ground is frozen.

The legislation leaves a window of opportunity for producers to surface apply manure early in the winter, or at any time the ground is not snow-covered or frozen. The limits on late winter application also encourage producers to plan for manure management, resulting in more nutrient uptake and better water quality.

The General Assembly defined what constitutes an emergency and explicitly stated that the failure to properly account for the volume to be stored is not an emergency. The law gave several examples of emergencies indicating they would be limited to infrequent events that could generally not be avoided such as a natural disaster, unusual weather conditions, or equipment or structural failure.

In 2010, producers who were concerned about having inadequate manure storage, and consequently having to apply manure during the winter, asked the Environmental Protection Commission for more time to improve their storage capacity. In the final adoption of rules, commissioners approved allowing confinement producers with inadequate storage emergency application possibilities through the 2014-2015 winter. This allows producers additional time to make decisions and make appropriate changes to their operations.

Producers who anticipate needing emergency land application are required to identify suitable fields in their manure management plans (MMPs). The law places additional restrictions on land application such as defining the types of fields where application would be allowed and protecting tile intakes. Starting Dec. 21, 2009, they began notifying the appropriate DNR regional field office prior to application.

Requests for Emergency Application

Most of the state had nearly ideal weather conditions for manure application following harvest in the fall of 2010. Dry weather and no snow meant most producers had several weeks to empty manure storage structures and land apply manure, making requests for emergency application after Dec. 21 unlikely. That proved true, and by Feb. 15, 2011, the DNR had received only nine requests for emergency surface application from producers affected by the law. All nine requests were from producers that lacked sufficient storage. That compares with 43 in 2010 when a wet fall and early snowfalls limited after-harvest manure application.

An additional 14 producers contacted field offices with concerns about winter manure application. None of these were required to report emergency application on snow-covered or frozen ground. Most (12 out of 14) were confinements that are small enough they are not required to have manure management plans. Field staff was still able to assist these producers in identifying safe areas for land application.

Table 1: Number of Requests for Emergency Application by DNR Field Office Area

Region of State	Number of Requests	
	Winter 2009-2010	Winter 2010-2011
Northeast	7	5
North central	5	2
Northwest	11	1
Southwest	8	0
South central	9	1
Southeast	3	0
Total	43	9

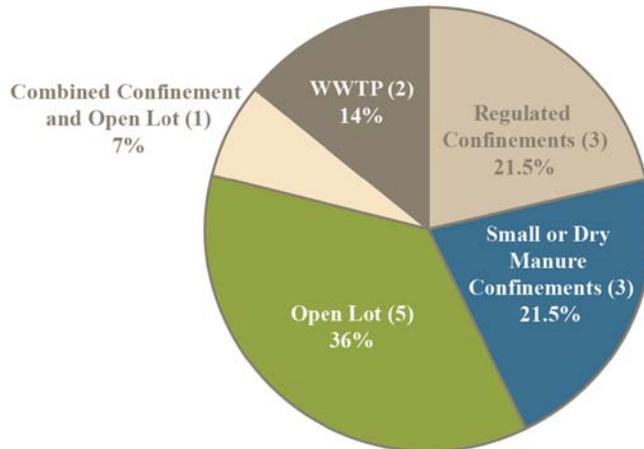
As inquiries came into field offices, DNR staff and producers worked together to decide on options for land application, the requirements for fields eligible for emergency surface application and the risks of surface runoff and water pollution when applying during late winter to frozen or snow-covered ground. Together, staff and producers sorted through and identified the best possible sites to surface apply manure.

Complaints

It's clear that confinements needing an MMP are not the only type of facility that poses a potential risk to surface water quality as snow melt and thawing occur. Other types of livestock and poultry facilities can also cause runoff or pollution issues. In fact, almost 78 percent of the complaints reported to the DNR about manure application on snow-covered or frozen ground concern producers not regulated under this law. In 2009-2010, nearly half (45 percent) of complaints about winter manure application were from small animal feeding operations (confinements that are not regulated under this law). During the 2010-2011 winter, less than 22 percent of complaints concerned regulated confinements spreading liquid manure. (See Table 2 below.)

Table 2 with Graph: Complaints Received about Manure Application on Frozen or Snow-Covered Ground during Winter of 2010-2011 by Housing Type

Housing Type	Number of Complaints	Percent of Complaints
Regulated Confinements	3	21.5
Small or Dry Manure Confinements	3	21.5
Open Lot	5	36
Combined Confinement and Open Lot	1	7
WWTP	2	14
Total	14	100



Most (71 percent) of the 14 complaints received this winter are about solid manure. Nearly 30 percent of complaints were about liquid manure application. A roughly equal number of complaints (43 and 36 percent respectively) were about manure application from confinement facilities and open feedlots, and 14 percent of complaints were about application from wastewater treatment plants. Clearly from the complainants' viewpoints, the problems are caused by all types of facilities, not just by confinement feeding operations. (See Tables 3 and 4.)

Table 3: Complaints Received about Manure Application on Frozen or Snow-Covered Ground during Winter of 2010-2011 by Manure Type

Manure Type	Number	Percent
Liquid	4	29
Solid	10	71
Total	14	100

Table 4: Complaints Received about Manure Application on Frozen or Snow-Covered Ground during Winter of 2010-2011 by Animal Type

Animal Type	Number	Percent
Swine	3	22
Cattle	6	43
Poultry	2	14
Industrial Waste	2	14
Horses	1	7
Total	14	100

Follow-up and Implications

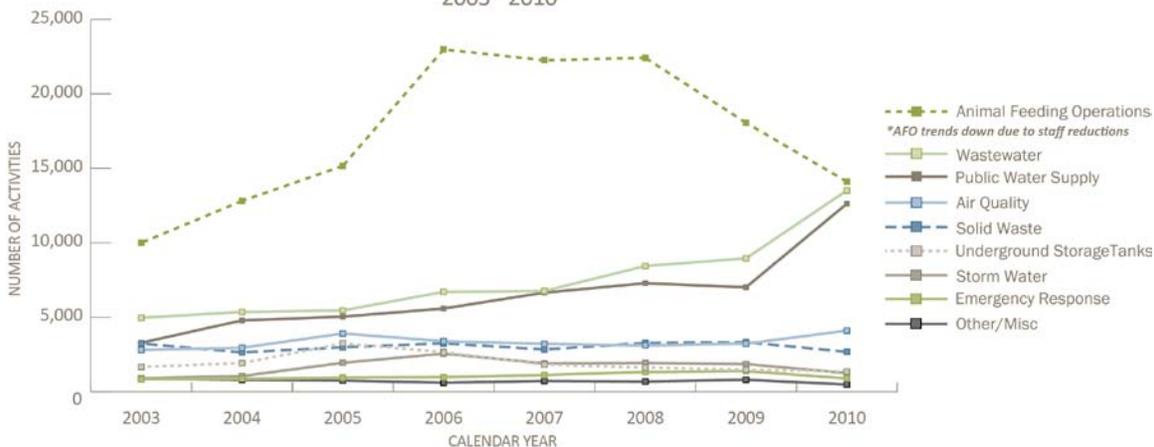
There are 5,487 confinement feeding operations in the state that are required to have manure management plans. Each facility is required to keep records of manure application and plan changes. They are also required to submit annual updates to the six regional DNR field offices. In addition, facilities must take soil fertility tests and update their complete manure management plan (taking into account the level of phosphorus in each intended application field) at least once every four years. The complete plans must be submitted to the DNR field office.

The DNR staffs in regional field offices are responsible for reviewing the manure management plans. The field offices provide local access for the public and increase the effectiveness of the DNR's regulatory work in outlying areas. In the relatively new animal feeding operations program field staff provide technical assistance to assure compliance with environmental regulations by inspecting facilities, ensuring manure applicators are certified and compliant, managing approximately 5,500 manure management plans each year, and providing compliance assistance to owners and operators who are trying to understand complex rules.

The scope and complexity of confinement program work increased disproportionately beginning with legislation in the late '90s. With this, public awareness of environmental issues also grew, resulting in a significant increase in local demand for education, compliance assistance and compliance assurance. To address these needs, animal feeding operations field staffing gradually increased to a high of 23 by SFY 2004. In SFY 2008, four staff people were shifted into a newly established open feedlots program. Then in the fall of 2009, as General Fund expenditures declined, confinement staffing was reduced again. This reduced staff numbers from 19 to 11.5. Further reductions leave the total of field staff for confinement work at 8.75 full time equivalents. This reduction means that the DNR will not be able to maintain an adequate level of compliance and enforcement activity in confinements.

The growth of the workload in the confined animal feeding operations program compared to other program areas is shown in the graph below. The downward trending line illustrates the effects of staff reductions and the resultant impact on confined animal feeding operations workload in 2009 and 2010.

TRENDS IN FIELD OFFICE ACTIVITIES BY PROGRAM AREA
2003 - 2010



The decrease in staff will impact critical compliance assistance, possibly curtailing or discontinuing some activities. It is not clear how this will affect the investigation of complaints related to manure application on snow-covered or frozen ground. Certainly the DNR intends to investigate water quality violations and fish kills within the staffing limitations.